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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/575,142

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Rudolf Kampf

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EXAMINER

GAKH, YELENA G

ART UNIT

PAPER NUMBER

1797

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/575,142	Applicant(s) KAMPF, RUDOLF	
	Examiner Yelena G. Gakh, Ph.D.	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☒ Claim(s) 1 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/16/06, 02/20/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Preliminary amendment filed on 04/06/09 is acknowledged. Claims 1-29 are pending in the application and considered on merits.

Drawings

2. The drawings are missing from US filed application.

Claim Objections

3. Claim 5 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The gas obtained from the polymer blend, melt or solution should already be heated, since it is obtained from the heated sample, and therefore the claim does not recite any further limitation to the parent claim.
4. Claim 1 is objected to because of the following informalities: the claim recites "mass spectrophotometer" instead of "mass spectrometer". Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-29 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for method in which the special conditions exist for forming a gas from the polymer blend, melt, solution, such as high temperature, to vaporize the contents of said blend, melt or solution, does not reasonably provide enablement for the method, in which such conditions are absent. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims. In order to perform step b) of withdrawing a sample gas, the gas should be formed from the polymer blend, melt or solution under specific conditions of heating.

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7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims recites "a composition of a polymer blend, melt, a solution ... to produce a polymer", which is not a clear expression, since the polymer blend, the polymer melt and the polymer solution are obtained from the polymer, which has been already produced, by blending, melting or dissolving the polymer, and therefore the process cannot have an aim to produce the polymer. Therefore, the expression renders the claims unclear and indefinite. It is also not clear, what might be "an installation volume".

Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: forming a sample gas from the polymer blend, melt, solution or combination thereof. The step is essential for enabling the method.

Claim 5 recites "wherein the gas is heated". It is not apparent, what is meant by this step, since the gas obtained from the polymer blend, melt or solution should already be heated, since it is obtained from the heated sample.

Claim 6 is unclear. It is not clear, how the gas can be heated to the condensation temperature, when condensation of the gas occurs upon lowering its temperature. The claim recitation is contradicting. The same is true for claim 11.

From claim 9 it is not clear, as to when the gas line is flushed with a flushing gas.

From claims 12 it is not clear as to what the flushing oxidizing gas is supposed to oxidize.

Since it is not clear, what the installation volume is, it is not apparent, as to what is recited in claim 13.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. **Claims 1-3, 5-6, 21, 29** are rejected under 35 U.S.C. 102(b) as being anticipated France et al. (US 2001/050056 A1) (France).

Regarding *claims 1 and 21* France teaches a method for monitoring a composition during graft polymerization by (a) guiding a polymer melt (particulate matter) through the installation volume (plasma generator); (b) withdrawing a sample gas the is formed from the polymer melt and (c) feeding the sample gas through a gas line connected to the installation volume and directly to a mass spectrometer, wherein the mass spectrometer automatically outputs an analysis signal representing the composition of the sample gas (see paragraph [0025]). Mass spectrometer is connected to longitudinal middle section 20. Longitudinal middle section comprises non-polymerizable plasma gas, which also serves as a transport gas to deliver the vapors to mass spectrometer (paragraph [0012]) with the gas being heated.

Claim Rejections - 35 USC § 102/103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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12. **Claims 1, 13-23 and 26-29** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Prober (US 6,327,521).

Regarding *claims 1, 17, 21 and 27-29* Prober discloses "a method for controlling the properties of the product polymer of a polymerization process, the process comprising at least one means for controlling at least one process input parameter and a means for venting the gases generated during the polymerization, thereby forming a vent gas stream, the method comprising:

diverting at least a portion of the vent gas stream to a compositional analysis means;
analyzing the diverted portion of the vent gas stream to determine the concentration of at least one component of the vent gas stream;
ascertaining a rate of loss of the at least one component of the vent gas stream;
comparing the rate of loss to a predetermined goal in order to provide an indication of the corrective action required; and
executing the corrective action indicated." (Summary of the Invention, col.3)

"In another embodiment of the present invention, the method is applied to a continuous polymerization process. In this embodiment, the several vent gas streams of the polymerization process are analyzed separately to determine the concentration of HMD and CPK being evolved *by the various distinct process units such as the evaporator, reactor, separator, and finisher.*" (col. 5, lines 27-33). "There are no particular limitations on the method of analysis employed except that the method must be selected to be capable of detecting the species of interest, and must be capable of providing a real-time concentration determination on a sample stream. Several means of analysis known in the art are suitable for the method of the invention. These include infrared spectroscopy, ultraviolet (UV) spectroscopy, **mass spectrometry**, ion selective electrodes, pH measurement, and solid state specific detectors." (Col. 3, lines 63-67, col. 4, lines 1-4).

Regarding *claims 13-16, 18-20, and 22-23* Prober teaches: "[t]he practice of the present invention offers numerous benefits not heretofore available in condensation polymerizations. The improvements in basic understanding of the dynamics of the process derived from the time-resolved determination of rate of evolution of vent gas components provides engineering insights into the process mechanism which leads to process improvements. This would include advanced process control strategies for real-time control of both the batch and CP processes rather than

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relying on delayed laboratory analysis of the polymer to adjust process conditions." (col. 5, lines 44-54). "The means by which adjustments in the process may be accomplished according to the method of the invention may be continuous or discontinuous, with or without direct human intervention. In one embodiment of the process control method of this invention a human operator may monitor the output of the method of the invention and periodically adjust heat input and/or HMD addition rate in response to previously established correlations with, respectively, degradation rates and product ends balance. In a preferred embodiment, the rates of evolution of the various components of the vent gas stream may be fed to a computer controlled closed loop process control system so that adjustments may be performed automatically." (col. 5, lines 55-67).

Automated controlling of the process at different structural elements of the apparatus (evaporator, reactor, separator, and finisher) inherently involves automated switching from one line to another line for transporting the vapors to the analyzer. Furthermore, since the monitoring is automated, such switching would comprise the clock for predetermined time for switching the lines.

13. **Claims 2-8 and 25** are rejected under 35 U.S.C. 103(a) as obvious over Prober (US 6,327,521).

Prober does not disclose providing the heated transport gas (*Claims 2-6*), because he discloses "measuring the rate of evolution of volatile species during polymerization", which requires undiluted flow of the evolved gases. However, for the method, which does not require measuring the rate of evolution, but rather only the content of the evolved gases, it would have been obvious for a person of ordinary skill in the art to apply heated transport gas in order to transport the evolved gases faster to the mass spectrometer.

Prober does not specifically disclose the temperatures for heating the gas line and the heater (claims 7, 8 and 25); however the process of polymerization is conventionally performed under specific pressure and temperature, and evolving gases requires application of temperature and pressure. Therefore, providing the heater to heat the gas lines and adjusting the temperatures of the gas lines would have been obvious for a routineer in the art with the temperature being a parameter which can be adjusted by a routine optimization for the specific process.

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14. **Claims 9-12 and 24** are rejected under 35 U.S.C. 103(a) as obvious over Prober in view of e.g. Griesmeier (US 2001/0028968 A1).

While Prober does not specifically disclose cleaning (flushing) the gas pipes with oxidizing gas, such way of cleaning is well known in the art, as indicated by e.g. Griesmeier, who discloses: "[t]he CO component remaining in the reformat gas stream after passing through the CO shift reactor 4 is selectively oxidized in the gas cleaning units 5a, 5b after an oxygen-containing medium, for example atmospheric oxygen, has been fed in via corresponding lines 18a, 18b. Such devices for selective oxidation are known from the prior art, as are CO shift reactors." (Paragraph [0024]). Therefore, it would have been obvious for a person of ordinary skill in the art to apply flush the gas pipes with oxidizing gas, as disclosed by e.g. Griesmeier in Prober's method and apparatus, since it is a conventional method of cleaning parts of the apparatus, specifically the gas lines.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yelena G. Gakh, Ph.D. whose telephone number is (571) 272-1257. The examiner can normally be reached on 9:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Y. Kim can be reached on (571) 272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yelena G. Gakh/
Primary Examiner, Art Unit 1797

9/27/2009